HF TRANSCEIVER

IC-78



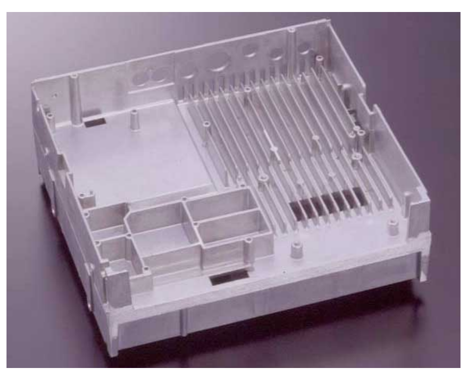
Icom Inc.

Reliable straight forward HF communications

The IC-78 is a high performance HF transceiver. Innovative features such as 99 memory channels, high C/N ratio, direct channel entering, data communication capabilities and more, offer easy operation for anyone. All these features come in a compact, rugged package that can be conveniently used in a base station or in a vehicle, as you prefer.

Durable, powerful construction

The IC-78 delivers a powerful 100 W of output power, providing the talk power you need to reach the most distant locations. Its one-piece, die-cast aluminum construction combined with a large heat sink, helps keep internal temperatures down and ensures that operation is stable at high duty cycles. And its compact size of 240(W)×95(H)×239(D) mm* makes installation easy.
*$9\frac{7}{16}$(W)×$3\frac{3}{4}$(H)×$9\frac{13}{32}$(D) in.



Simple operation

The IC-78 is equipped with a large easy-to-read LCD. A minimum number of switches and controls allow for superior feature selectability. Keys access functions directly–there's no secondary function key. You can enter your operating frequency*, or memory channel number directly from the 10-key pad.
*depending on version

Ample 99 channels with 8-digit channel name capability

An affordable 99 duplex memory channels are available for storing individual transmit and receive frequencies, operating mode, filter setting, as well as 8-character channel names. You can enter channel assignments easily from the 10-key pad. In addition, an extra 1 call memory is available for storing the most often used, or most important frequency. An independent, one-touch recall switch is available.

Superior basic performance

A 4-element system is employed for the 1st receive mixer, providing superior receive IMD, especially from in-band, nearby interfering signals. A well-designed double-conversion system to help minimize image and spurious responses for better signal fidelity, is also built-in. A newly designed PLL circuit has been adopted to improve C/N ratio characteristics. The combination of the 4-element system mixer and new PLL circuit allows superior basic performance.

Front mounted loud speaker

With the speaker facing the operator, audio sounds can be clearly heard without impediment during operation. It is no longer necessary to manually increase the volume to try and capture audio sounds.

High frequency stability

When the optional CR-338 HIGH STABILITY CRYSTAL UNIT is installed, it allows up to ±0.5 ppm of extremely high stable operation.

Flexible filter selection

An optional IF filter can be installed into the transceiver, providing 5 passband widths selectable in SSB, CW or RTTY modes.

VFO mode operation*

For continuous frequency operation, VFO mode operation* capability is available. It is convenient when searching for signals, around the programmed frequencies, such as short wave broadcasts, etc.
*depending on version

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■ Superior features support serious communications ■

■ Direct channel selection

A 10-key pad has been adopted on the front panel. A channel number, or an operating frequency*, can be entered from the keypad directly. Also, memory channel editing is possible. A large channel selector and up/down keys are available to suit your operating style for your convenience. Total and simple operation is provided!
*depending on version

■ Cloning capability

Programmed data cloning capability between transceivers is available, so that an identical transceiver setting can be made immediately.

■ Built-in 2-tone alarm*

The 2-tone alarm for an emergency signal transmission is built-in*. Independent tone switch is adopted for quick and simple emergency calls.
*depending on version

■ Data communications

In addition to the current voice and key operation, FSK (First Shift Keying) type RTTY mode is available. By connecting a terminal unit or terminal node controller to the ACC socket on the rear panel, data acquisition and text-base file transfers and other data communication can be made. On RTTY, shift width, tone frequencies and polarization are also selectable.



■ Noise blanker

To reduce pulse-type noise, a level adjustable noise blanker is built-in. Various levels of pulse-type noise, such as from car ignitions, etc., can be reduced.

■ Pre-amp. and attenuator

A pre-amplifier and an RF attenuator are adopted for more pleasant reception. Convenient when weak signals or extremely strong signals are received, to present better quality readability.

■ SQL/RF gain controller

In addition to the squelch control, an RF gain control is available, and the controller is combined with the squelch control. The RF gain adjusts minimum response receiver gain, and ignores signals weaker than the pre-set level— providing pleasant stand-by, or scanning. The SQL/RF GAIN controller action is selectable from squelch only, RF gain only or combined, in the SET mode according to your operating style and mode.

■ Other features

- Built-in mic. compressor increases average talk power
- Complete CW features
- Variety of scanning function types
- IF shift interference rejection
- Built-in antenna tuner control circuit and selectable antenna tuner
- Hand microphone is supplied
- VOX capability, and more...



SPECIFICATIONS

GENERAL

- Frequency range : Rx 0.030–29.999999 MHz*1
  Tx 1.600–29.999999 MHz*2
  *1Guaranteed range: 0.5–29.999999 MHz
  *2Not guaranteed for some frequency bands
- Mode : USB, LSB, CW, RTTY (FSK), AM
- Number of memory Ch. : 99 (Duplex) +1 (Call channel)
- Frequency stability : Less than ±200 Hz from 1 min. to 60 min. after power ON. After that rate of stability less than ±30 Hz/hr. at +25˚C (+77˚F). Temperature fluctuations 0˚C to +50˚C (+32˚F to +122˚F) less than ±350 Hz
- Power supply requirement: 13.8 V DC ±15 % (negative ground)
- Current drain (at 13.8 V DC):
  Receive Stand-by 1.3 A
  max. audio 2.0 A
  Transmit max. power 20.0 A
- Operating temp. range : –10˚C to +60˚C; +14˚F to +140˚F
- Antenna connector : SO-239 (50 Ω)
- Dimensions (projections not included) : 240(W)×95(H)×239(D) mm
  9 7⁄16(W)×3 3⁄4(H)×9 13⁄32(D) in
- Weight (approx.) : 3.8 kg; 8 lb 6 oz
- ACC connector : 13-pin
- REMOTE connector : 2-conductor 3.5 (d) mm (1⁄8″)

TRANSMITTER

- Modulation system :
  SSB Balanced modulation
  AM Low level modulation
- Output power :
  SSB, CW, RTTY 2–100 W
  AM 2–40 W
- Spurious emissions : Less than –46 dB below peak output power
- Carrier suppression : More than 40 dB
- Unwanted sideband : More than 50 dB
- Microphone connector : 8-pin connector (600 Ω)
- KEY connector : 3-conductor 6.5 (d) mm (1⁄4″)
- SEND connector : Phono (RCA)
- ALC connector : Phono (RCA)

All stated specifications are typical and subject to change without notice or obligation.

RECEIVER

- Receiver system : Double-conversion superheterodyne
- Sensitivity (10 dB S/N) :
  SSB, CW, RTTY 0.16µV (1.600–29.999999 MHz)
  (0.5 µV at 12 dB SINAD)
  AM 13 µV (0.5–1.599999 MHz)
  2 µV (1.600–29.999999 MHz)
- SQL sensitivity : Less than 5.6 µV (SSB)
- Selectivity :
  SSB, CW, RTTY More than 2.1 kHz/–6 dB
  Less than 4.5 kHz/–60 dB
  AM More than 6.0 kHz/–6 dB
  Less than 20 kHz/–40 dB
- Spurious and image rejection ratio : More than 70 dB (1.600–29.999999 MHz)
- Audio output power (at 13.8 V DC) : More than 2.0 W at 10% distortion with an 8 Ω load
- PHONES connector : 3-conductor 6.5 (d) mm (1⁄4″)
- EXT SP connector : 2-conductor 3.5 (d) mm (1⁄8″) /8 Ω

Supplied accessories:

- Hand microphone
- Spare fuses
- DC power cable

OPTIONS



PS-85 DC POWER SUPPLY
Output: 13.8 V DC (20 A max.)



AT-130/E HF AUTOMATIC ANTENNA TUNER
Covers 1.6–30 MHz with a 7 m (23 ft) or longer wire antenna.



AH-4 AUTOMATIC ANTENNA TUNER
Covers 3.5–30 MHz with a 7 m (23 ft) or longer wire antenna.



AH-2b ANTENNA ELEMENT
For mobile operation with the AH-4. All bands between 7–30 MHz can be matched.



MN-100 ANTENNA MATCHER
Match the transceiver to a dipole antenna without applying DC power. 8 m×2 antenna wires come attached.



MN-100L ANTENNA MATCHER
Match the transceiver to a long-wire antenna without applying DC power. 15 m×1 antenna wire comes attached.



SM-20 DESKTOP MICROPHONE
High quality desktop microphone. Includes.[UP]/[DOWN] switches and low cut function.



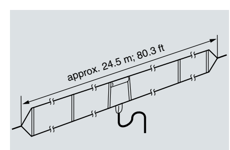
SM-8 DESKTOP MICROPHONE
Equipped with 2 connection cables. [UP]/[DOWN] switches are included.



SM-6 DESKTOP MICROPHONE
Electret condenser-type desktop microphone.



HM-36 HAND MICROPHONE
Same as that supplied.



AH-710 FOLDED DIPOLE ANTENNA
Covers from 1.9 to 30 MHz. Has a SO-239 connector. Easy to assemble (non-kink construction).



CR-338 HIGH STABILITY CRYSTAL UNIT
Contains a temp. compensating heater for improved frequency stability. Frequency stability: ±0.5 ppm



455 kHz FILTERS
Have good shape factor and provide you with better reception.

FL-52A CW/RTTY narrow; 500 Hz/–6 dB
FL-53A CW narrow; 250 Hz/–6 dB
FL-96 SSB wide; 2.8 kHz/–6 dB
FL-222 SSB narrow; 1.8 kHz/–6 dB
FL-257 SSB wide; 3.3 kHz/–6 dB



CT-17 CI-V LEVEL CONVERTER
For remote transceiver control from a PC equipped with an RS-232C port.



MB-23 CARRYING HANDLE
For easy portability.

SP-7 EXTERNAL SPEAKER
SP-20 EXTERNAL SPEAKER
SP-21 EXTERNAL SPEAKER
IC-MB5 MOBILE BRACKET

Icom Inc. 6-9-16, Kamihigashi, Hirano-ku, Osaka 547-0002, Japan Phone: 06 6793 5302 Fax: 06 6793 0013 **URL: http://www.icom.co.jp/world/index.html**

Count on us!

Icom America Inc.
<Corporate Headquarters>
2380 116th Avenue N.E., Bellevue, WA 98004, U.S.A.
Phone : (425) 454-8155 Fax : (425) 454-1509
URL : http://www.icomamerica.com
<Customer Service> Phone : (425) 454-7619

Icom Canada
Glenwood Centre #150-6165 Highway 17,
Delta, B.C., V4K 5B8, Canada
Phone : (604) 952-4266 Fax : (604) 952-0090
URL : http://www.icomcanada.com

Icom (Australia) Pty. Ltd.
A.C.N. 006 092 575
290-294 Albert Street, Brunswick, Victoria, 3056, Australia
Phone : 03 9387 0666 Fax : 03 9387 0022
URL : http://www.icom.net.au

Asia Icom Inc.
6F No. 68, Sec. 1 Cheng-Teh Road, Taipei, Taiwan, R.O.C.
Phone : (02) 2559 1899 Fax : (02) 2559 1874

Icom (Europe) GmbH
Communication Equipment
Himmelgeister Str. 100, D-40225 Düsseldorf, Germany
Phone : 0211 346047 Fax : 0211 333639
URL : http://www.icomeurope.com

Icom Spain S.L.
Crta. de Gracia a Manresa Km. 14,750
08190 Sant Cugat del Valles Barcelona, SPAIN
Phone : (93) 590 26 70 Fax : (93) 589 04 46
URL : http://www.icomspain.com

Icom (UK) Ltd.
Unit 9, Sea St., Herne Bay, Kent, CT6 8LD, U.K.
Phone : 01227 741741 Fax : 01227 741742
URL : http://www.icomuk.co.uk

Icom France S.a
Zac de la Plaine, Rue Brindejonc des Moulinais
BP 5804, 31505 Toulouse Cedex, France
Phone : 561 36 03 03 Fax : 561 36 03 00
URL : http://www.icom-france.com

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Certificate Number Q14190

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